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KILLING GOOD PATENTS TO WIPE OUT BAD PATENTS: *BILSKI*, THE EVOLUTION OF PATENTABLE SUBJECT MATTER RULES, AND THE INABILITY TO SAVE VALUABLE PATENTS USING THE REISSUE STATUTE

Edward Van Gieson and Paul Stellman†

Abstract

The Supreme Court's Bilski decision changed the rules on patentable subject matter. This means that software and business method inventions must be claimed in specific ways in order for a patent to be valid. Bilski affects all software and business method patents, including patents issued to innovative and widely admired technology companies. As a result, many "good" patents are now potentially invalid. The U.S. patent system includes a patent reissue statute and long-standing reissue jurisprudence that promises patent owners the ability to liberally correct the claims of an issued patent, even when there has been a change in law after a patent has issued. The change in the Supreme Court's jurisprudence on patentable subject matter would not be a severe problem if the reissue statute worked as originally intended. However, patent reissue proceedings, as currently implemented by the United States Patent & Trademark Office, are agonizingly slow and layered with restrictive rules. This makes reissue impractical, and even impossible, in many situations. Moreover, even if patents can be corrected to address Bilski, the patent owner still loses out on the ordinary investment backed expectations of owning an enforceable patent during lengthy reissue proceedings. As such, there is a potential regulatory taking from

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patent owners, because they are effectively unable to use reissue to adapt to the Supreme Court's changing rules on patentable subject matter. Solutions are proposed for how the courts and the patent office can apply the reissue statute to permit patent owners to restore their valuable patent rights efficiently and effectively.

I. INTRODUCTION

The amorphous U.S. Supreme Court decision in *Bilski v. Kappos*, 130 S. Ct. 3218 (2010), has now set the stage for years of Federal Circuit litigation defining the scope of patentable subject matter for software and business method patents under 35 U.S.C. § 101.¹ New tests will likely be created,² and old tests will likely be refined.³ In the meantime, independent inventors, small start-up companies, multinational blue chip corporations, research universities, and non-profits will invent new software applications and methods of doing business over the Internet. The constantly shifting sands of patentable subject matter will undoubtedly give their patent attorneys headaches and will inject another level of uncertainty into the strategic business decisions made by these enterprises.

The evolving patentable subject matter jurisprudence of the Supreme Court results in significant changes in the legal tests for whether a claim in a software patent is valid. Is this situation fair to innovative companies that previously spent millions on R&D to develop patent portfolios under then-settled law that may now be rendered worthless by a change in the Supreme Court's interpretation of the Patent Act?

The Patent Act includes a reissue statute,⁴ which has been interpreted by extensive reissue jurisprudence stating that patent

1. 35 U.S.C. § 101 (2000) defines the scope of patentable subject matter: "Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title."

2. See *Bilski v. Kappos*, 130 S. Ct. 3218, 3222-23 (2010) ("In disapproving an exclusive machine-or-transformation test, this Court by no means desires to preclude the Federal Circuit's development of other limiting criteria that further the Patent Act's purposes and are not inconsistent with its text.").

3. See, e.g., *Research Corporation Techs. v. Microsoft*, No. 01-cv-0658, slip op. (D. Az. Jul. 28, 2009), *appeal docketed*, No. 2010-1037 (Fed. Cir. Oct. 22, 2009) (pending appeal in the Federal Circuit and dealing with the "particular machine" prong of the machine-or-transformation test).

4. 35 U.S.C. § 251 (2000).

owners should be given liberal leave to correct issued patents.⁵ However, are companies able to effectively correct issued patents when the courts change the legal tests for patentable subject matter? Furthermore, in light of the changes in patentable subject matter under *Bilski*, is the Patent Office's implementation of the reissue statute so slow and so layered with restrictive rules that it frustrates the effective correction of issued patents in a manner that results in a regulatory taking of patent rights in violation of the Fifth Amendment of the U.S. Constitution? In short, has *Bilski* resulted in many "good" patents being needlessly killed?

II. PATENTABLE SUBJECT MATTER JURISPRUDENCE IMPOSES ADDITIONAL NON-STATUTORY RESTRICTIONS ON HOW SOFTWARE AND BUSINESS METHOD INVENTIONS MAY BE CLAIMED

One of the major issues for any patent system is determining what types of inventions are patentable, commonly known as "patentable subject matter." Patent systems are designed to provide incentives for individuals and companies to innovate and invest money in new products and services.⁶ Many countries, however, impose statutory limits on the types of inventions that are patentable. For example, some countries have statutory bars against granting certain types of patents for moral, humanitarian, or other reasons.⁷

The United States patent system has few statutory limits on the types of subject matter that are patentable. Under 35 U.S.C. § 101 a patent can be obtained for: "any new and useful process, machine,

5. See, e.g., 35 U.S.C. § 251 (2000); *Grant v. Raymond*, 31 U.S. (6 Pet.) 218, 241-42 (1832).

6. See, e.g., *Kewanee Oil Co. v. Bicron Co.*, 416 U.S. 470, 480 (1974) (noting that "[t]he [U.S.] patent laws promote [the Progress of Science and Useful Arts] by offering a right of exclusion for a limited period as an incentive to inventors to risk the often enormous costs in terms of time, research, and development. The productive effort thereby fostered will have a positive effect on society through the introduction of new products and processes of manufacture into the economy, and the emanations by way of increased employment and better lives for our citizens.").

7. See, e.g., Patents (Amendment) Act, 2002, No. 38, Acts of Parliament, 2002. s. 4(a) (India) (excluding from patentable subject matter "an invention the primary or intended use or commercial exploitation of which would be contrary to public order or morality or which causes serious prejudice to human, animal or plant life or health or to the environment"); Convention on the Grant of European Patents, art. 52(2), Oct. 5, 1973, 1065 U.N.T.S. 199 ("The following in particular shall not be regarded as inventions within the meaning of paragraph 1: (a) discoveries, scientific theories and mathematical methods; (b) aesthetic creations; (c) schemes, rules and methods for performing mental acts, playing games, or doing business, and programs for computers; (d) presentations of information.").

manufacture, or composition of matter, or any new and useful improvement therefor.”⁸ The Patent Act imposes only minimal limits on patentable subject matter.⁹ In particular, under 35 U.S.C. § 181, the grant of a patent for certain types of inventions that are potentially detrimental to national security may be barred for as long as is required to protect the security interest.¹⁰

There are no statutory prohibitions in the U.S. Patent Act against the patenting of software or business method inventions. Indeed, there is even an explicit mention in 35 U.S.C. § 273 of methods of conducting business in the context of infringement defenses,¹¹ which at least acknowledges the existence of patents related to business methods.

In addition to a technical description of the invention, a patent must include at least one claim, where an individual claim is a single sentence description of the legal scope of what is being patented.¹² Software inventions can be claimed in any way consistent with 35 U.S.C. § 101.¹³ This includes claiming a process executed by software; a machine utilizing software; and software stored on a computer readable medium as an article of manufacture.¹⁴ For many types of software and business method patents, it is the process claims that provide the broadest protection.¹⁵ Thus, the Patent Act, on its

8. 35 U.S.C. § 101 (2000) (defining the scope of patentable subject matter: “Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.”).

9. See 35 U.S.C. § 101; see also, e.g., 35 U.S.C. § 181 (2010); 35 U.S.C. § 287(c) (2006) (limiting damages for certain medical procedures in some cases).

10. 35 U.S.C. § 181 (“Whenever publication or disclosure by the publication of an application . . . might . . . be detrimental to the national security, the Commissioner of Patents upon being so notified shall order that the invention be kept secret and shall withhold the publication of an application . . .”).

11. See 35 U.S.C. § 273(a)(3) (2006) (“the term ‘method’ means a method of doing or conducting business”).

12. See 35 U.S.C. § 112 (2006).

13. See 35 U.S.C. § 101.

14. See *id.*

15. See 35 U.S.C. § 100(b) (2006) (defining a process as including a “process, art or method, and includes a new use of a known process, machine, manufacture, composition of matter, or material.”); *Diamond v. Diehr*, 450 U.S. 175, 182-84 (1981) (explaining the history of processes as patentable subject matter and noting that their patentability is independent of any associated machinery); ROBERT C. FABER, *FABER ON MECHANICS OF PATENT CLAIM DRAFTING* 4-13, 4-43 (Practicing Law Institute, 6th ed. 2010) (noting that “apparatus limitations will often unduly limit the claim” (internal citations omitted) and describing how “[a] method of doing business does not require inclusion of a computer, or a server, or the like apparatus in the method claim.”).

face, permits the patenting of new uses of known processes and machines, subject to the other statutory requirements of 35 U.S.C. §§ 102-103—that the invention be novel and that the “subject matter as a whole” would have been non-obvious at the time the invention was made to a person of ordinary skill in the art.¹⁶

The United States has a long-standing jurisprudence limiting the types of subject matter that are patentable.¹⁷ In some situations, this might create an absolute bar to obtaining a patent. For example, a patent cannot be obtained for the mathematical formula for a law of nature, such as Einstein’s famous formula of $E=mc^2$.¹⁸ However, for many types of inventions, the patentable subject matter jurisprudence has the effect of imposing restrictions on *how* an invention can be claimed that is only indirectly related to whether the underlying invention has social utility or otherwise deserves a patent.

Consider the telegraph as an example. The telegraph is in one sense a specific “machine” for sending and receiving dots and dashes over telegraph lines. There is also a specific process for using that specific machine to send dots and dashes. More abstractly, the telegraph is a means for sending information. In the case of the telegraph, the Supreme Court held that Claim 8 of Samuel Morse’s patent was unpatentable.¹⁹ Claim 8 of Morse’s patent was directed to the use of electromotive force to send and mark a message of intelligible characters or signs at any distance.²⁰ The Supreme Court invalidated Claim 8 in part because it was not directed to a practical application and implementation of an idea.²¹ In essence, the Supreme Court found Claim 8 problematic because Morse was attempting to

16. 35 U.S.C. §§ 102-103 (2006).

17. See, e.g., *Cochrane v. Deener*, 94 U.S. 780 (1876); *Parker v. Flook*, 437 U.S. 584 (1978); *Gottschalk v. Benson*, 409 U.S. 63 (1972); *Diamond v. Chakrabarty*, 447 U.S. 303 (1980); *Diehr*, 450 U.S. at 192-93; *Bilski v. Kappos*, 130 S. Ct. 3218, 3231 (2010).

18. See, e.g., *Benson*, 409 U.S. at 71-73 (invalidating an algorithm as an unpatentable abstract idea).

19. *O’Reilly v. Morse*, 56 U.S. (15 How.) 62, 62 (1853).

20. *Id.* at 112 (“Eighth. I do not propose to limit myself to the specific machinery or parts of machinery described in the foregoing specification and claims; the essence of my invention being the use of the motive power of the electric or galvanic current, which I call electro-magnetism, however developed for marking or printing intelligible characters, signs, or letters, at any distances, being a new application of that power of which I claim to be the first inventor or discoverer.”).

21. *Id.* at 113 (“while he shuts the door against inventions of other persons, the patentee would be able to avail himself of new discoveries in the properties and powers of electro-magnetism which scientific men might bring to light. For he says he does not confine his claim to the machinery or parts of machinery, which he specifies; but claims for himself a monopoly in its use, however developed, for the purpose of printing at a distance”).

claim the idea behind the telegraph as a general scientific principle in terms that were too abstract and general in manner.²² However, other claims in Morse's patent were held to be valid, including a variety of apparatus, system, and method of use claims more closely tied to the structures described in Morse's patent application.²³

U.S. courts have wrestled throughout the years with the patentability of software and business methods.²⁴ Although there are no special statutory limits on the patentability for software, the courts have developed a jurisprudence that imposes additional non-statutory restrictions on how software and business methods can be claimed so that there are meaningful limits on the scope of the claims.²⁵ That is, the courts have required software and business method patents to be claimed in specific ways in order for the claims to be valid. For example, some types of computer implemented methods that are essentially claiming only the use of a mathematical formula have been found unpatentable if the field of use and post-solution activities are so insignificant that the patent preempts application of the formula in all fields.²⁶ However, an industrial application of a mathematical formula as part of a computer-implemented method of curing rubber is patentable.²⁷ There are, of course, many other doctrines that can potentially come into play, such as non-obviousness²⁸ and definiteness.²⁹

22. See *id.* See also the United States Patent & Trademark Office's set of internal rules, the Manual of Patent Examining Procedure. U.S. PAT. & TRADEMARK OFFICE, U.S. DEP'T OF COMMERCE, MPEP § 706.03(a)(I)(C) (8th ed. Rev. 8, July 2010) [hereinafter MPEP] ("A scientific principle, divorced from any tangible structure, can be rejected as not within the statutory classes. *O'Reilly v. Morse*, 56 U.S. (15 How.) 62 (1854).").

23. *O'Reilly*, 56 U.S. at 112 (noting that the first seven claims were valid).

24. See *Parker v. Flook*, 437 U.S. 584 (1978); *Gottschalk v. Benson*, 409 U.S. 63 (1972); *State Street Bank & Trust Co. v. Signature Financial Group*, 149 F.3d 1368 (Fed. Cir. 1998).

25. See, e.g., *Benson*, 409 U.S. 63 (invalidating a method for converting binary-coded decimals to pure binary numerals as an unpatentable algorithm that was not limited to any particular digital computer); *Flook*, 437 U.S. 584 (invalidating method claims directed to alarm limits for catalytic converters as unpatentable abstract ideas and insignificant post-solution activities); *State Street*, 149 F.3d at 1373 (creating a "useful, concrete and tangible" results test for § 101); *In re Bilski*, 545 F.3d 943 (Fed. Cir. 2008) (*en banc*) (overturning *State Street* and creating a "machine-or-transformation" test for patentable subject matter), *aff'd on other grounds, sub nom. Bilski v. Kappos*, 130 S. Ct. 3218, 3231 (2010) (rejecting method claims as unpatentable abstract ideas and holding that the "machine-or-transformation" test is not an exclusive test).

26. See *Flook*, 437 U.S. at 589-91.

27. *Diamond v. Diehr*, 450 U.S. 175, 192-93 (1980).

28. See generally 35 U.S.C. § 103 (2010).

29. See generally 35 U.S.C. § 112 (2010).

Bilski is a landmark case for software and business method patents. The decision does not broadly bar such patents, but rather imposes an additional layer of non-statutory restrictions on how software and business methods must be claimed.³⁰ This may totally bar a small class of business method innovations from being eligible for a patent. However, more generally, the effect of *Bilski* on future patents is that it imposes additional requirements for obtaining valid, enforceable software and business method patents. For many patents filed in the future, these additional sets of considerations will not be an insurmountable bar to obtaining a patent. For many patents filed in the past under a different legal regime, patentees must either hope that their patents remain valid if challenged in court, or they must seek to modify their patents and navigate the pitfalls of the reissue statute.³¹

III. THE SHIFTING SANDS OF PATENTABLE SUBJECT MATTER JURISPRUDENCE: CHANGING THE RULES OF THE GAME FOR PREVIOUSLY ISSUED PATENTS

The Federal Circuit and the Supreme Court continually change the rules on what constitutes patentable subject matter.³² On June 28, 2010, the U.S. Supreme Court issued its landmark holding in *Bilski v. Kappos*, which concerned the patentability of process claims under 35 U.S.C. § 101.³³ The patent at issue in *Bilski* was a business method for managing consumption risk—essentially a process for buyers and sellers to hedge against the risk of price changes in commodity markets.³⁴ *Bilski*'s patent was held to be invalid as an attempt to patent an abstract idea, running afoul of the doctrine that patentable subject matter does not include laws of nature, physical phenomena, or abstract ideas.³⁵ The Court noted that such hedging methods are abstract ideas that have long been prevalent in the finance field.³⁶ The Supreme Court also rejected the Federal Circuit's earlier holding that the "machine-or-transformation" test is the only test for determining

30. See *Bilski*, 130 S. Ct. 3218.

31. See 35 U.S.C. § 251 (2000).

32. See *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., Ltd.*, 535 U.S. 722, 739 (2002) (In the context of prosecution history estoppel, Justice Kennedy notes the unfairness involved in abruptly changing the law, where inventors had previously prosecuted their claims under previously existing law.).

33. See *Bilski*, 130 S. Ct. 3218.

34. *Id.* at 3223-24.

35. *Id.* at 3231.

36. *Id.*

whether a process claim is patentable subject matter.³⁷

The question remains: In rejecting *Bilski*'s business method claims, did the Supreme Court also invalidate valuable patents held by the nation's most innovative companies? Is software still patentable subject matter? And if so, under what conditions?

Bilski should be viewed in historical context as part of the continuing evolution of the law on patentable subject matter for software and business methods. In 1998, the Federal Circuit expanded the scope of eligible subject matter by articulating a useful, concrete, and tangible test in *State Street Bank & Trust Co. v. Signature Financial Group*.³⁸ In *State Street*, the Federal Circuit held that a patent claiming a method of allocating assets among multiple mutual funds was patentable subject matter under 35 U.S.C. § 101.³⁹ The court explained that the algorithm "produce[d] 'a useful, concrete and tangible result'—a final share price momentarily fixed for recording and reporting purposes and even accepted and relied upon by regulatory authorities and in subsequent trades."⁴⁰

In October 2008, the Federal Circuit's opinion in *In re Bilski* wholly rejected the *State Street* test and articulated the narrower machine-or-transformation test as the exclusive test for determining eligible subject matter.⁴¹ Because the patent in *Bilski* described a method for hedging risk that was not tied to a particular machine and did not transform an article into a different state or thing, the claims were ruled invalid under 35 U.S.C. § 101.⁴² The Supreme Court has now somewhat loosened the definition of eligible subject matter while reaffirming the unpatentability of abstract ideas. Specifically, although the Court noted that the machine-or-transformation test is one clue to showing that an invention constitutes patentable subject matter, it clearly stated that the machine-or-transformation test is not an exclusive test.⁴³ However, the Supreme Court did not provide any guidance on what other tests may be used besides the machine-or-transformation test. In the coming years, the Federal Circuit will almost certainly apply additional tests as it interprets the holding of

37. *Id.* at 3225-28.

38. *State St. Bank & Trust Co. v. Signature Fin. Grp., Inc.*, 149 F.3d 1368 (Fed. Cir. 1998).

39. *Id.* at 1373.

40. *Id.*

41. *In re Bilski*, 545 F.3d 943, 955-56 (Fed. Cir. 2008).

42. *Id.* at 963-66.

43. *Bilski v. Kappos*, 130 S. Ct. 3218, 3231 (2010).

Bilski in different cases.⁴⁴

The underlying invention at issue in *Bilski* was a business method where the social utility of granting a patent was questioned by four members of the Court.⁴⁵ That is, the *Bilski* decision is colored by the fact that several of the Justices were opposed to business method patents in general and to the specific type of business method patent at issue.⁴⁶

Bilski's case was unsympathetic for other reasons. The claims of *Bilski*'s patent application are arguably obvious in light of the prior art and hence undeserving of a patent on that basis alone.⁴⁷ Additionally, *Bilski*'s patent application had been rejected by the U.S. Patent and Trademark Office as not complying with Patent Office rules on patentable subject matter, with the patent examiner rejecting the application as being the "manipulat[ion] [of] an abstract idea . . . without any limitations to a practical application . . ."⁴⁸ *Bilski* thus deals with the situation of a patent applicant that should have known that his patent application was not in comportment with Patent Office rules at the time his patent application was filed and, moreover, never perfected his patent application into an issued patent.⁴⁹ Nevertheless, *Bilski* has a retroactive effect on all previously issued patents, even those for otherwise meritorious inventions in which the patent owner complied with every Patent Office rule to obtain an issued patent.⁵⁰

44. *See id.* ("In disapproving an exclusive machine-or-transformation test, we by no means foreclose the Federal Circuit's development of other limiting criteria that further the purposes of the Patent Act and are not inconsistent with its text."). Moreover, the Federal Circuit is expected to rule on the patentability of subject areas outside of software and business methods, such as medical diagnostic patents.

45. *See id.* at 3243 (Stevens, J., concurring) ("regardless of how one construes the term 'useful arts,' business methods are not included").

46. *See id.*

47. *See id.* at 3231 (noting that "[c]laims 1 and 4 in petitioners' application explain the basic concept of hedging, or protecting against risk: 'Hedging is a fundamental economic practice long prevalent in our system of commerce and taught in any introductory finance class.'").

48. *Bilski*, 130 S. Ct. at 3233.

49. *See id.*

50. The *Bilski* Court did not limit the opinion to future patent applications; consequently, current patent owners must review their issued patents for compliance with *Bilski* retroactively. *Cf. Moist Cold Refrigerator Co. v. Lou Johnson Co.*, 217 F.2d 39 (9th Cir. 1954), *cert. denied*, 348 U.S. 952 (1955) (patentee's reliance during prosecution on earlier law that was later invalidated was an error made without deceptive intent for purposes of the patent reissue statute); *see also* Gene Quinn, *The Fundamental Unfairness of Retroactively Applying Bilski*, IP WATCHDOG, January 6, 2010, <http://ipwatchdog.com/2010/01/06/the-fundamental-unfairness-of-retroactively-applying-bilski/id=8258/> (describing the unfairness of applying *Bilski* retroactively to patentees that had relied on previously settled § 101 law).

Fortunately, not every software and business method patent is of the same questionable social utility as that in *Bilski*. There are software patents that protect services developed by leading technology companies that spend millions of dollars on research and development. As one example, there are many patents related to protecting innovation in the field of business intelligence, which is the effective use of information to make business decisions.⁵¹ Additionally, there are patents directed to covering the software invented by social media websites, like Facebook, used by hundreds of millions of people.⁵² What about software and business method patents directed to companies and services that people admire for their innovation? To some extent, the *Bilski* decision is colored by the fact that the patentability of the underlying business method was of dubious merit on several grounds, including obviousness.⁵³

One of the main problems with the *Bilski* decision is that it affects a wide range of issued patents including patents in fields where there is arguably great social value towards encouraging ingenuity. An unintended consequence of the *Bilski* decision is that it punishes companies that currently hold patents issued under a different legal regime.

IV. GOOGLE CASE STUDY

Software patents owned by many companies are potentially at risk under *Bilski*. Consider Google's early patents as an illustrative case study, which one commentator has suggested are at risk because they do not satisfy the machine-or-transformation test.⁵⁴

In September 1998, two young Stanford graduate students moved into a small garage in Menlo Park, California, to continue development of a search engine for their fledgling start-up, which had just received a \$100,000 investment.⁵⁵ One of them, Larry Page, filed a patent application on January 9, 1998, entitled "Method For Node

51. See, e.g., Sec. for External Sys. Mgmt., U.S. Patent No. 7,591,006 (filed Dec. 29, 2004) (issued Sep. 15, 2009) (assigned to SAP AG).

52. See, e.g., Ranking Search Results Based on the Frequency of Clicks on the Search Results by Members of a Social Network Who Are Within a Predetermined Degree of Separation, U.S. Patent No. 7,788,260 (filed Oct. 18, 2004) (issued Aug. 31, 2010) (assigned to Facebook, Inc.).

53. See *Bilski*, 130 S. Ct. at 3231 (noting the "long prevalen[ce]" of the subject matter of the claims in the field of finance).

54. John F. Duffy, *The Death of Google's Patents?*, PATENTLY-O BLOG, July 21, 2008, <http://www.patentlyo.com/patent/law/googlepatents101.pdf>.

55. Google History, GOOGLE.COM, <http://www.google.com/corporate/milestones.html> (last visited Jan. 29, 2011).

Ranking in a Linked Database.”⁵⁶ Claim 1 of the resulting issued patent reads as follows:

1. A computer implemented method of scoring a plurality of linked documents, comprising:

obtaining a plurality of documents, at least some of the documents being linked documents, at least some of the documents being linking documents, and at least some of the documents being both linked documents and linking documents, each of the linked documents being pointed to by a link in one or more of the linking documents;

assigning a score to each of the linked documents based on scores of the one or more linking documents and

processing the linked documents according to their scores.⁵⁷

The ‘999 Patent is now a foundational patent for Google, Inc., which presently has a market capitalization of over \$150 billion.⁵⁸ This patent generally covers Google’s PageRank search methodology, the process used to sort and rank websites using the company’s famous search engine.⁵⁹ Put simply, the claims recite: (1) obtaining “linked” and/or “linking” documents; (2) assigning a score to the “linked” documents; and (3) “processing the linked documents according to their scores.”⁶⁰

Legal commentators have suggested that Claim 1 of the ‘999 patent is not tied to a particular machine and does not generate an output that would satisfy the machine-or-transformation test.⁶¹ However, the machine-or-transformation test is not an exclusive test anymore.⁶² Thus, even assuming that the legal commentators are correct in stating that Claim 1 does not satisfy the machine-or-transformation test, there might still be legal arguments that Claim 1 would be found valid in the future if courts develop additional tests

56. U.S. Patent Appl. No. 09/004,827. The resulting issued patent is assigned to Stanford University, and has been exclusively licensed by Google until at least 2011. Google, Inc., Registration Statement (Form S-1), 67 (Apr. 29, 2004), available at <http://sec.gov/Archives/edgar/data/1288776/000119312504073639/ds1.html>.

57. U.S. Patent No. 6,285,999 col.8 l.55-68 (filed Jan. 9, 1998) (issued Sept. 4, 2001) [hereinafter ‘999 Patent].

58. See, e.g., Google Finance, GOOGLE.COM, <http://www.google.com/finance/?q=google> (last visited Jan. 29, 2011).

59. See Duffy, *supra* note 54, at 2 (citing Google, Inc., Registration Statement (Form S-1), *supra* note 56, at 65).

60. See ‘999 Patent, *supra* note 57, col.8 l.55-68.

61. See Duffy, *supra* note 54, at 3-4.

62. *Bilski v. Kappos*, 130 S. Ct. 3218, 3231 (2010).

for patentable subject matter.

One additional consideration is that the *Bilski* Court may have also increased the vulnerability of certain types of software patents under the abstract ideas doctrine. The abstract ideas doctrine is intended to prevent the patenting of fundamental principles that would wholly preempt the public's access to specific fields.⁶³ That is, one cannot patent a mathematical formula if the claims would preempt all applications of the mathematical formula in other fields.⁶⁴ *Bilski*'s patent was criticized as pre-empting risk hedging in all fields.⁶⁵ However, Justice Stevens' concurrence noted that the *Bilski* Court's decision might be interpreted as including "language that could suggest a shift in our approach to that issue."⁶⁶ Among other things, Justice Stevens observed that the Court "discounts the [patent] application's discussion of what sorts of data to use, and how to analyze those data, as mere 'token postsolution components.'"⁶⁷ Additionally, Justice Stevens noted that the Court artificially limited *Bilski*'s claims to hedging instead of considering the term as applying to a "category of processes including petitioners' claims."⁶⁸

In at least two recent post-*Bilski* Federal Circuit decisions, the court interpreted the abstract ideas doctrine rather narrowly.⁶⁹ While these two recent cases narrowly construed the exceptions to § 101, the Federal Circuit did not announce any new tests for patentable subject matter.⁷⁰ Moreover, given Justice Stevens' concerns, patent owners still live under a cloud of uncertainty until the Supreme Court revisits the abstract ideas doctrine. Indeed, one of the first district courts

63. See *id.* at 3229.

64. See *Gottschalk v. Benson*, 409 U.S. 63, 71-72 (1972) (invalidating a claim that "would wholly pre-empt the mathematical formula and in practical effect would be a patent on the algorithm itself").

65. See *Bilski*, 130 S. Ct. at 3231.

66. *Id.* at 3235. (Stevens, J., concurring).

67. *Id.*

68. *Id.*

69. See *Research Corp. Techs., Inc. v. Microsoft Corp.*, 627 F.3d 859, 868-69 (Fed. Cir. 2010) (concluding that, because "[t]he invention presents functional and palpable applications in the field of computer technology," a method for halftoning gray scale images was a statutory process, even though the asserted claims did not explicitly recite a computer or other machine); *Prometheus Labs., Inc. v. Mayo Collaborative Servs.*, 628 F.3d 1347, 1354-55 (Fed. Cir. 2010) (holding that claims directed to methods for determining the optimal dosage of drugs to treat autoimmune diseases fell within § 101, because (1) the claims were applications of "a patent-eligible application of naturally occurring correlations" and thus did not pre-empt all uses of the correlations, and (2) claimed treatment methods met the transformation prong of the machine-or-transformation test).

70. See *id.*

applying *Bilski* has indeed interpreted the decision as signaling a shift in the abstract idea doctrine. On August 13, 2010, the district court of Central California in *Ultramercial, LLC v. Hulu, LLC*, invalidated U.S. Patent No. 7,346,545 (“the ‘545 Patent”) under the holding of *Bilski*.⁷¹ The ‘545 Patent has method claims related to a method of delivering media products over the Internet.⁷² The *Ultramercial* court observed:

the ‘545 patent is the basic idea that one can use advertisement as an exchange or currency. An Internet user can pay for copyrighted media by sitting through a sponsored message instead of paying money to download the media. This core principle, similar to the core of the *Bilski* patent, is an abstract idea.⁷³

The *Ultramercial* court then found that other limitations of the claims were not sufficient to avoid preemption in other fields.⁷⁴ In particular, the *Ultramercial* court stated that, “similar to the patent in *Bilski*, the added features, examples, or limitations of the ‘545 patent do not make it patentable. . . . If the claimed invention here were patentable, it would ‘preempt use of this [method] in all fields.’”⁷⁵

Assuming that Justice Stevens’ concern regarding a shift by the Supreme Court is correct and assuming that other courts follow the example of the district court in *Ultramercial*, a wider range of software patents are potentially invalid under the abstract ideas doctrine.⁷⁶ In the case of Google’s patents, consider the implications if a similar approach was applied based on the concern expressed by Justice Stevens. In such an analysis, limitations in Google’s patent related to the type of data to use and how to analyze the data would be discounted. Additionally, the claims would be interpreted in their broadest sense possible when considering whether the claims preempt applications of searching in other fields.⁷⁷

Is Google’s ‘999 Patent potentially at risk under the abstract

71. *Ultramercial v. Hulu*, No. 09-06918 (C.D. Cal. Aug. 13, 2010).

72. *Id.* at 2.

73. *Id.* at 6.

74. *Id.*

75. *Id.*

76. It is noted that future Federal Circuit decisions may clarify whether Justice Stevens was correct regarding a possible shift in the interpretation of the abstract ideas doctrine such that the potential risk to Google’s patents may change dramatically as the courts evolve the interpretation of the abstract ideas doctrine.

77. Note also that Justice Stevens expressed a concern, not a certainty, about how the language of the Court might be interpreted as a shift on the abstract ideas doctrine. See *Bilski v. Kappos*, 130 S. Ct. 3218, 3257 (2010).

ideas doctrine when viewed in the harsh light of Justice Stevens' comments that the Court might have used language signaling a change in the abstract ideas doctrine? The recited language of Claim 1 in the '999 Patent is rather broad; besides covering Google's innovative search technology, the language of the claim might arguably also be interpreted as preempting the manual acts of "scoring a plurality of linked documents," particularly if the field of use in the preamble ("computer implemented method") and the post-solution activities ("processing") are discounted.⁷⁸ In the case of the '999 Patent, the specification states that links are essentially the same thing as citations such that a linked database can include "any database of documents containing mutual citations, such as . . . a database of academic articles . . . or court cases."⁷⁹ While the '999 Patent provides examples of scoring using advanced mathematical techniques, it also provides examples of evaluating the rank of citations by institution, geographic location, unusually important source locations, and weighting back citations from highly ranked links.⁸⁰

In short, if Claim 1 is interpreted in a manner suggested by Justice Stevens' comments in *Bilski* to discount various aspects of the claim, then Claim 1 of the '999 Patent includes steps that preempt a law student from performing a manual search and ranking technique to analyze citations in a set of books, law review articles, or court cases, and then subsequently ranking the documents by hand. For instance, Claim 1 would read on a law student who visited the law library to sort through the most relevant literature on a particular legal subject. To infringe this claim, for example, the student might visit the library and physically retrieve three textbooks: book A (a linking document that cites book B), book B (both a linked document cited by book A and a linking document that cites book C), and book C (a linked document cited by book B). Upon obtaining these three books, the student might then "score" linked documents B and C and subsequently "process" them by hand in her notebook. Claim 1 of the '999 Patent, construed according to its plain language, could therefore be infringed by manual acts performed by a law student. Just as *Bilski*'s method for hedging risks was held to be an abstract idea,

78. Note that the "computer implemented method" language is a statement of use within the preamble and under current USPTO policy would not likely be given patentable weight. See MPEP, *supra* note 22, at § 2106(II)(c).

79. '999 Patent, *supra* note 57, col.3 l.56-59.

80. See *id.* at col.7 l.1-27.

Claim 1 of Google's '999 Patent, in the worst case, risks invalidation because the claimed PageRank method "would pre-empt use of this approach in all fields, and would effectively grant a monopoly over an abstract idea."⁸¹

Yet, Google's patent counsel could not have reasonably foreseen these developments. For instance, when Google's '999 Patent was prosecuted from 1998 until 2001, *State Street* governed the scope of patentable subject matter. The liberal *State Street* requirements—that the subject matter be useful, concrete, and tangible⁸²—would easily be met by Claim 1 of Google's '999 Patent. In Claim 1, for example, linked documents are scored based on the "linking" documents, and are subsequently stored based on those scores.⁸³ The end result of Google's algorithm is quite "useful, concrete and tangible"—a list of sorted documents on the search engine's website. Indeed, the prosecuting patent attorneys likely were quite confident that the search engine's claims were much more of a patentable process than the *State Street* business method claims that were upheld.

Google's patent position changed overnight when *Bilski* was decided on appeal by the Federal Circuit in October 2008.⁸⁴ Method claims like Claim 1 of the '999 Patent do not recite any particular machine (the "computer-implemented method" language appears in the preamble as a statement of intended use and is not given patentable weight),⁸⁵ and the "linked documents" are not articles that are transformed into a different state or thing.⁸⁶ Even though the Supreme Court loosened the Federal Circuit's § 101 tests, as demonstrated previously, Google's method claims still risk being invalidated as an unpatentable abstract idea. Google must now attempt to read the tea leaves of the Supreme Court's decision and guess how the law will change going forward as the issue is litigated in the Federal Circuit and district courts over the next several years.

While Google may have been very successful even without this particular patent, the company clearly values its patent portfolio. As

81. See *Bilski*, 130 S. Ct. at 3231. Also see Duffy, *supra* note 54, at 2, for a thorough analysis of the patentability of the '999 Patent under the Federal Circuit's test in *Bilski*.

82. *State St. Bank v. Signature Fin. Grp.*, 149 F.3d 1369, 1373 (Fed. Cir. 1998).

83. '999 Patent, *supra* note 57, col.8 l.55-68.

84. *In re Bilski*, 545 F.3d 943 (Fed. Cir. 2008).

85. See MPEP, *supra* note 22, at § 2111.02 (II).

86. Claims 18-19 of the '999 Patent instead recite a "computer-readable medium" and are therefore more likely to remain valid even under the machine-or-transformation test, however the other 27 method claims are vulnerable under *Bilski*. See '999 Patent, *supra* note 57, col.10 l.18-19.

Google's S-1 filing illustrates, "[a]ny significant impairment of our intellectual property rights could harm our business or our ability to compete."⁸⁷ Moreover, a recent study of patents and entrepreneurship found that start-ups often use patents to build and maintain their competitive advantage.⁸⁸ Because investors expect their portfolio companies to protect their intellectual property, many start-ups, like Google in the late 1990s, aggressively seek patent protection for strategic purposes, regardless of whether they have a marketable product to sell.⁸⁹ Any significant shifts in patent law would therefore alter the strategic calculus of investors such as venture capitalists, which might have a chilling effect on new investments. To prevent their investor-backed growth strategies from being frustrated by rapid changes in patent law, start-ups must strive to ensure that their patent portfolio remains valid.⁹⁰

The value of a patent encompasses many factors. These include the potential upside value, in terms of damages and other benefits, to a company if the patent is successfully asserted. The present value of a patent, however, is discounted by any litigation risks involved in asserting the patent that will significantly increase the costs and reduce the odds of winning a patent lawsuit. As a result, even if the result of *Bilski* is only an elevated risk that a particular software patent might be found invalid if litigated, the potential value of that patent is decreased.

Is it fair for innovative companies to lose patent rights when there has been a change in law regarding the definition of patentable subject matter? Patents are considered to be a form of social bargain.⁹¹ The patent statute requires the patent owner to disclose technical information in the patent sufficient for others to make and use the invention.⁹² In return, the patent owner is granted a limited monopoly to the invention.⁹³ In the case of Google's '999 Patent,

87. See Google, Inc., Registration Statement (Form S-1), *supra* note 56, at 9.

88. Stuart J.H. Graham et al., *High Technology Entrepreneurs and the Patent System: Results of the 2008 Berkeley Patent Survey*, 24 BERKELEY TECH. L.J. 1255, 1288 (2010).

89. See *id.* at 1296.

90. See Paul R. Michel & Henry R. Nothhaft, *Inventing Our Way Out of Joblessness*, N.Y. TIMES (Aug. 5, 2010), www.nytimes.com/2010/08/06/opinion/06nothhaft.html?_r=2&pag (citing Berkeley Patent Survey and noting that "[t]hree-fourths of executives at venture capital-backed startups say patents are vital to getting financing").

91. See U.S. CONST. art. I, § 8 ("Congress shall have Power . . . [t]o promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries").

92. 35 U.S.C. § 112 (2006).

93. U.S. CONST. art. I, § 8.

details of a computer implemented search technology to rank documents are disclosed in the patent.⁹⁴ The owners of the '999 Patent have kept their part of the social bargain by disclosing details of Google's page ranking technology.⁹⁵ Additionally, the '999 Patent was otherwise properly obtained from the Patent Office at a time when the useful, concrete, and tangible test of *State Street* was good law.⁹⁶ Yet, in light of the *Bilski* decision, the value of the '999 Patent is now at risk.

While individual claims of Google's '999 Patent are potentially at risk of being invalidated, one of the interesting things about the '999 Patent is that the technical description in the '999 Patent describes various features that might satisfy the machine-or-transformation test, and, theoretically, these features would have been disclosed and enabled under 35 U.S.C. § 112. For example, the '999 Patent provides a technical description of returning a search result to a user using a search engine and a computer system having a web crawler that explores the web and creates an index of web content.⁹⁷ Thus, in theory, all of the claims of the '999 Patent could have been written in a manner that would have been comparatively safe under the current legal tests for patentable subject matter.⁹⁸

Google is, of course, only one example of a company that played by the rules and filed patents that were valid when issued. Many innovative companies have issued software patents where there is a risk that the claims do not satisfy the safe-harbor of the machine-or-transformation test.⁹⁹ If Justice Stevens is correct that the Supreme Court might have signaled a shift in the abstract ideas doctrine, there is also an increased risk that many of these same software patents are potentially invalid under the abstract ideas doctrine.

94. See generally '999 Patent, *supra* note 57.

95. See 35 U.S.C. § 112 (requiring adequate disclosure of the scope of the invention).

96. *State St. Bank v. Signature Fin. Grp.*, 149 F.3d 1368 (Fed Cir. 1998), was decided in 1998, and the '999 Patent was prosecuted between 1998 and 2001.

97. '999 Patent, *supra* note 57, col.8 l.6-20.

98. See *Bilski v. Kappos*, 130 S. Ct. 3218, 3235 (2010) (noting that "the machine-or-transformation test is a useful and important clue, an investigative tool, for determining whether some claimed inventions are processes under § 101").

99. See, e.g., U.S. Patent No. 5,845,300 (filed June 5, 1996) (issued Dec. 1, 1998) (Microsoft); U.S. Patent No. 7,788,260 (filed Oct. 18, 2004) (issued Aug. 31, 2010) (Facebook); U.S. Patent No. 6,067,540 (filed Feb. 28, 1997) (issued May 23, 2000) (Oracle Corp).

V. THE REISSUE STATUTE: AN EQUITABLE REMEDY IN THEORY BUT AN INEQUITABLE QUAGMIRE IN PRACTICE

What can enterprises do to remedy claims that are at a high risk of being invalidated by changes in the law? The U.S. patent system includes a reissue statute, 35 U.S.C. § 251, which is specifically intended to give a patent owner means to correct issued patents so that a patent owner does not unnecessarily lose valuable rights for errors made without deceptive intent.¹⁰⁰ The use of reissue to correct a patent is a long-standing feature of the U.S. patent system. For example, several of Samuel Morse's telegraph patents were reissued to correct the patents.¹⁰¹

The Federal Circuit explains that the reissue statute is "remedial in nature and is based on fundamental principles of equity and fairness."¹⁰² In theory, a patent owner with a well-written patent is able to liberally correct the claims of an issued patent to maintain the value of the patent in the face of changes in law. On its face, the reissue statute of 35 U.S.C. § 251 permits patent owners with liberal leave to correct the claims of their issued patents if errors are identified in the claims that render them invalid under 35 U.S.C. § 101.¹⁰³ 35 U.S.C. § 251 states:

[w]henver any patent [that] is, through error without any deceptive intention, deemed wholly or partly inoperative or invalid . . . by reason of the patentee claiming more or less than he had a right to claim in the patent, the Director shall, on the surrender of such patent and the payment of the fee required by law, reissue the patent for the invention disclosed in the original patent, and in accordance with a new and amended application, for the unexpired part of the term of the original patent.¹⁰⁴

The reissue statute imposes only a few limitations on the ability of a patent owner to correct the claims of an issued patent to address changes in the interpretation of patentable subject matter under 35 U.S.C. § 101. First, the error must been made without any deceptive

100. See 35 U.S.C. § 251 (2000). By contrast, Certificates of Correction are intended for correcting clerical or typographical errors, such as spelling errors. See 35 U.S.C. § 255 (2000). Reexamination procedures are suited for an expensive, thorough review of a patent's validity based on new prior art references. See 35 U.S.C. §§ 301-06 (2000).

101. See *O'Reilly v. Morse*, 56 U.S. (15 How.) 62, 82-83 (1853).

102. *Ball Corp. v. United States*, 729 F.2d 1429, 1439 n.28 (Fed. Cir. 1984).

103. See 35 U.S.C. § 251.

104. *Id.*

intention.¹⁰⁵ A patent owner has strong incentives to obtain patents that are valid when issued. Moreover, the Patent Office is supposed to check that the claims comply with 35 U.S.C. § 101 at the time the patent is examined by the Patent Office.¹⁰⁶ As a result, it would normally be expected that a patent can be corrected by reissue to address a later change in the law of patentable subject matter. Second, no new matter can be introduced by reissue.¹⁰⁷ This means that any amended claims in a reissue patent must be supported by the technical description in the original patent. Thus, for example, if the original patent described a particular machine, the process claims could be amended to be tied to that machine because the technical description in the original patent supports such an amendment. Third, the scope of the claims cannot be enlarged unless the reissue application is filed within two years of the issue date of the original patent.¹⁰⁸ In practice, a patentee wishing to seek a reissue patent will file with the USPTO, *inter alia*, a copy of the specification and drawings (with no new matter), the claims (including amendments), and a reissue oath that points out an error made without deceptive intent.¹⁰⁹

The reissue statute thus permits a patent owner to liberally correct a claim of an issued patent that is invalid for any reason except for deceptive action by the patent owner.¹¹⁰ As Chief Justice Marshall noted in an early reissue case, the “interest and policy of every enlightened government” is to promote the progress of science and useful arts.¹¹¹ Chief Justice Marshall continued by explaining that justice pleads against depriving an inventor of the compensation and reward that they deserve for their patent:

[I]t cannot be doubted that the settled purpose of the United States has ever been, and continues to be, to confer on the authors of useful inventions an exclusive right in their inventions for the time mentioned in their patent. It is the reward stipulated for the advantages derived by the public for the exertions of the individual, and is intended as a stimulus to those exertions. The laws which are passed to give effect to this purpose ought, we think, to be construed in the spirit in which they have been made; and to execute the contract fairly on the part of the United States,

105. *Id.*

106. MPEP, *supra* note 22, at § 2106(IV).

107. 35 U.S.C. § 251.

108. *Id.*

109. *See* MPEP, *supra* note 22, §§ 1400-90.

110. *See* 35 U.S.C. § 251.

111. *Grant v. Raymond*, 31 U.S. (6 Pet.) 218, 241 (1832).

where the full benefit has been actually received: if this can be done without transcending the intention of the statute, or countenancing acts which are fraudulent or may prove mischievous. The public yields nothing which it has not agreed to yield; it receives all which it has contracted to receive. The full benefit of the discovery, after its enjoyment by the discoverer for fourteen years, is preserved; and for his exclusive enjoyment of it during that time the public faith is pledged. *That sense of justice and of right which all feel, pleads strongly against depriving the inventor of the compensation thus solemnly promised, because he has committed an inadvertent or innocent mistake.*¹¹²

In the past, courts have sanctioned the use of reissue to correct claims rendered invalid by a change of law.¹¹³ For example, in *Moist Cold Refrigerator Co. v. Lou Johnson Co.*,¹¹⁴ the patentee's original issued patent was invalidated by the later Supreme Court decision in *Halliburton Oil Well Cementing Co. v. Walker* for failing to adequately describe the means employed in the asserted claims.¹¹⁵ The patentee subsequently filed for reissue "on the ground that the original patent had been declared invalid as functional, and that such a decision could not have been foreseen when the patent was obtained."¹¹⁶ The Ninth Circuit upheld the validity of the reissue patent because "the purpose of a reissue is to protect a patentee's right to receive the benefits of his invention"¹¹⁷

In practice, however, it is difficult for patent owners to use the reissue statute in an effective manner to handle continual changes in the courts' definition of patentable subject matter. This creates a patent correction crisis for patent owners, who face an unnecessary and irrational loss in the value of their patent portfolios every time the courts change the rules of the game on patentable subject matter.

112. *Id.* at 241-42 (emphasis added). See also *Ball Corp. v. United States*, 729 F.2d 1429, 1439 n.28 (Fed. Cir. 1984) (explaining that "[r]eissue is remedial in nature and is based on fundamental principles of equity and fairness").

113. 4A DONALD S. CHISUM, CHISUM ON PATENTS § 15.03 (2010).

114. See *Moist Cold Refrigerator v. Lou Johnson Co.*, 217 F.2d 39 (9th Cir. 1954), *cert. denied*, 348 U.S. 952 (1955).

115. See *Halliburton Oil Well Cementing Co. v. Walker*, 329 U.S. 1 (1946).

116. *Moist Cold Refrigerator*, 217 F.2d at 40.

117. *Id.* at 43-44. See also CHISUM, *supra* note 113, at § 15.03 (citing *In Re Richman*, 409 F.2d 269 (C.C.P.A. 1969)); *Rohm & Haas Co. v. Roberts Chem., Inc.*, 245 F.2d 693 (4th Cir. 1957) (upholding a reissue patent that took advantage of legal changes after the issuance of the original patent).

A. Long Pendency Devalues Reissued Patents

An unrecognized problem with the *Bilski* decision is that the correction procedures of the United States Patent and Trademark Office (USPTO) are inadequate to deal with rapid changes by the courts in the definition of eligible subject matter. In practice, a patent owner faces severe problems in correcting patents to deal with changes in the courts' interpretation of patentable subject matter under 35 U.S.C. § 101. Patent Office regulations mandate that reissue applications be "examined in the same manner as a non-reissue, non-provisional application" and that patent examiners act on reissue applications "in advance of other applications."¹¹⁸ The USPTO's correction procedures are exceedingly slow, however, with one commentator estimating an average pendency of five years from the start to the finish of reissue proceedings.¹¹⁹ In the authors' experience, reissue proceedings can drag for as long as ten years if the case is appealed to the Board of Patent Appeals and Interferences or the Federal Circuit.¹²⁰

The five-to-ten years required for reissue proceedings is simply so long that many patents are uncorrectable by reissue under 35 U.S.C. § 251, thus eradicating much or all of a patent's value when the courts change the interpretation of patentable subject matter. A patent has maximum patent term of twenty years from the date of filing, subject to minor exceptions.¹²¹ Viewed from the perspective of total patent lifetime, reissue proceedings that last for five to ten years can therefore consume 25-50% of the maximum term.

This estimated percentage is misleading for several reasons. First, it often takes three or more years for a patent to issue, such that issued patents are typically in force for no more than about seventeen years.¹²² In individual cases, it is not unheard of for a patent to spend up to seven years before the Patent Office before finally coming to issue.¹²³ Moreover, the 20-year maximum term of a continuation

118. 37 C.F.R. § 1.176(a) (2002).

119. Dennis Crouch, *Reissue Applications over Time*, PATENTLY-O BLOG, Aug. 23, 2009, <http://www.patentlyo.com/patent/2009/08/reissue-applications-over-time-1.html>.

120. See, e.g., Reissue Application No. 10/016,750, which was filed on Dec. 10, 2001, and remains pending almost a decade later in the Federal Circuit. See *In re Mostafazadeh*, No. 10-1260, *appeal docketed* (Fed. Cir. March 24, 2010).

121. 35 U.S.C. § 154 (2006).

122. See *Performance and Accountability Report Fiscal Year 2010*, USPTO.GOV, <http://www.uspto.gov/about/stratplan/ar/2010/USPTOFY2010PAR.pdf> (last visited Jan. 29, 2011).

123. See, e.g., U.S. Patent No. 7,346,545 (filed May 29, 2001).

patent is with respect to the filing date of its parent patent, with the result that many continuation patents are in force for much shorter periods.¹²⁴ In practice, a typical continuation patent strategy is to wait until a parent patent application is about to issue before filing a continuation patent claiming priority to the parent patent.¹²⁵ Thus, the twenty-year maximum is shortened by the cumulative time the parent patent application and the continuation are examined by the Patent Office. And, as explained above, an individual patent can easily spend anywhere from three to seven years being examined by the Patent Office. As a result, it is fairly common for individual patents to issue with only ten to fifteen years of enforceable term. In that context, reissue proceedings that take five-to-ten years could wipe out much of the maximum possible enforceable term of an issued patent.

Second, a company with a portfolio of patents typically has patents with a range of remaining terms. For example, if a company began to file patents after the 1998 *State Street* decision and continued to file patents through the final decision by the *Bilski* Court, then the portfolio has filing dates spread apart by more than a decade with a corresponding range in remaining patent terms. Individual patents may very well be uncorrectable in that the remaining term of some patents in the portfolio may be less than typical lengths of time to pursue reissue proceedings and any appeals. For example, Google's '999 Patent will expire in January 2018.¹²⁶ If a reissue were filed in 2011, the reissue would likely remain in prosecution until at least 2016 or 2017,¹²⁷ leaving only one or two years of enforceability. If reissue is filed any later, there would likely be no remaining patent term.

Third, the long pendency of reissue proceedings increases the possibility that the patent's value is diminished under 35 U.S.C. § 252 by what is known as "the doctrine of intervening rights."¹²⁸ The doctrine of intervening rights is related to the equitable rights of parties to continue to perform acts after the grant of the reissue

124. MPEP, *supra* note 22, at § 201.07; *see also* 35 U.S.C. § 154 (2006).

125. Consider a patent that issued after three years, and a continuation is filed just prior to issuance. If the continuation takes another three years to issue, then its effective remaining term would only be fourteen years, since the twenty years is measured from the priority date of the parent patent under 35 U.S.C. § 154.

126. '999 Patent, *supra* note 57. Filed on Jan. 9, 1998, the '999 Patent will expire on Jan. 9, 2018. *Id.*

127. *See* Crouch, *supra* note 119.

128. *See* 35 U.S.C. § 252 (2006).

patent.¹²⁹ Intervening rights arise if the reissue claims that are granted are significantly different than the original patent claims and competitors make at least “substantial preparation . . . before the grant of the reissue” to perform acts that would infringe a claim of the reissue patent.¹³⁰ Under the doctrine of intervening rights, the infringer may seek relief from a court for the “equitable . . . protection of investments made or business commenced before the grant of the reissue.”¹³¹ As an illustrative example, suppose that a company owns a pioneer patent in a business field that is just beginning to take off. In this example, we will assume that all of the issued claims in the original patent have questionable validity under *Bilski* such that none of the claims that emerge from reissue will correspond exactly to an issued claim of the original patent. The company might have a reissue patent granted five or more years in the future after the reissue application is filed. During those five years, competitors may enter the same business space and make investments or open businesses. If the reissue claims are significantly different from those in the original patent, then the competitors may seek equitable relief under 35 U.S.C. § 252 if the patent owner tries to assert the reissue patent. In the previous example of Google’s ‘999 Patent, suppose that a reissue application is filed in 2011 and a reissue patent is granted in 2016 to leave two years of enforceability. Two years of enforceable term would still, in theory, permit the patent to be asserted for two years worth of future damages or injunctive relief. Any search engine company in existence prior to the 2016 grant of the reissue patent, however, could attempt to seek equitable relief under the doctrine of intervening rights to continue to practice any claim in the reissue patent that was not present in the original patent.

The five-to-ten years required for reissue proceedings thus creates the situation that many patents are simply uncorrectable, in any practical sense, to deal with the courts’ evolving patentable subject matter jurisprudence. For patents with a short remaining term it may simply be impossible to use reissue to correct the patent by reissue in light of typical reissue pendency. Moreover, in many situations the doctrine of intervening rights may result in a reissue patent that cannot be equitably enforced against competitors that made investments or commenced business in the same space before the conclusion of reissue proceedings.

129. *Id.*

130. *Id.*

131. *Id.*

*B. Diminished Past Damages If Reissue Patent Is Not For A
"Substantially Identical" Invention*

Another aspect of the value of a patent is the right to collect damages for infringement. The filing of a reissue application can also result in a patent owner losing rights to past damages. A patent owner usually seeks past damages whenever possible, i.e., damages for any infringement that occurred prior to filing of a patent lawsuit.¹³² One of the benefits of process claims is that the patentee does not have to mark products or provide notice prior to suit to collect damages for up to six years prior to suit.¹³³ But one of the dangers of reissue proceedings to correct 35 U.S.C. § 101 issues is that the patent owner risks losing rights to all past damages prior to the issue date of the reissue patent.¹³⁴ This is due to 35 U.S.C. § 252's requirement that "the claims of the original and reissued patents [must be] substantially identical" in order for the patent owner to be able to collect past damages for infringement taking place before the issue date of the reissued patent.¹³⁵ In order to address invalidity under 35 U.S.C. § 101, a patent owner would typically have to amend the claims during reissue in a significant manner, such as by tying the process claims to a particular machine or adding an additional limitation that satisfies the transformation test. Such significant changes to the claims may result in a change in claim scope, because the "standard applied is that of whether a particular change to the claims is substantive, such that the scope of the claims is no longer substantially identical."¹³⁶ Arguably, adding a limitation (such as adding additional method steps to transform the state of an article to satisfy the "transformative" prong of the machine-or-transformation test) to remedy § 101 concerns would result in such a substantive amendment to the claims.

Consider a claim directed to a high-definition television receiver where the claim recites process steps directed to a signal processing algorithm used inside the television receiver to process encoded HDTV signals. In this example, assume that the issued claim recites no real-world outputs satisfying the transformation test and is not tied

132. See generally 35 U.S.C. §§ 284, 286 (2006).

133. See 35 U.S.C. § 287(a) (2006).

134. See 35 U.S.C. § 252 (requiring that the reissue claims be "substantially identical" to the original claims in order to "have effect continuously from the date of the original patent"). Thus, if a claim is not "substantially identical," damages would not accrue from the original issue date. *Id.*

135. 35 U.S.C. § 252.

136. *Slimfold Mfg. Co., Inc. v. Kinkead Indus., Inc.*, 810 F.2d 1113, 1116 (Fed. Cir. 1987).

to a specific machine. Adding limitations in reissue directed to converting the signal into a displayable format and displaying the high-definition format on a television display screen might satisfy the machine-or-transformation test, but it would also significantly narrow the scope of the original signal processing claims. Here, the reissue claim would not have substantially the same scope as the original claim.¹³⁷ Thus, in addition to other problems, a patent owner that attempts to use reissue to correct an issued patent for 35 U.S.C. § 101 issues risks losing rights to all past damages for the entire time period prior to the conclusion of the reissue proceedings.

Why are rights to past damages so important? First, for many patents, the remaining term of the patent may be so short that the patent will have little remaining term when reissue proceedings are completed.¹³⁸ Second, the five or more years required by reissue are an eternity in many industries. The industry may have moved in a different direction during this time period such that the only damages that remain are for past damages. Third, the status of reissue proceedings is posted on the Patent Office website.¹³⁹ Competitors have years to design around any patent undergoing reissue proceedings. Thus, by the time reissue proceedings are completed, a company's competitors will have had ample time to design around any reissue patent.

C. *Non-Statutory Reissue Declaration and Potential Estoppel Issue*

Even if a patent has many years of remaining term, filing a reissue application to address 35 U.S.C. § 101 patentable subject matter issues can destroy much of the value of an issued patent. One aspect of the value of a patent is the right to pursue injunctive relief to stop competitors from infringing a patent. Under 35 U.S.C. § 283, the owner of a patent has the right to exclude others from making or using the patented invention by seeking an injunction.¹⁴⁰

Unfortunately, the mere filing of a reissue application to address 35 U.S.C. § 101 issues may in some cases dissuade a patent owner from filing suit during reissue proceedings, because the Patent Office

137. *See id.*

138. *See* Crouch, *supra* note 119 (discussing the extremely long pendency for PTO reissue procedures).

139. *See* U.S.P.T.O. Patent Application Information Retrieval, USPTO.GOV, <http://portal.uspto.gov/external/portal/pair> (last visited Jan. 29, 2011).

140. *See* 35 U.S.C. § 283 (2006).

requires the patent owner to submit a reissue declaration pointing out at least one specific error for which correction is being sought during reissue.¹⁴¹ Note that while the statute itself refers to an “error,” there is no statutory requirement for a reissue declaration;¹⁴² the requirement merely arises from USPTO rules and procedures.¹⁴³

Nevertheless, the reissue declaration required by the Patent Office creates a potential estoppel issue. If a patent owner files a reissue declaration stating that the error is that the claims are invalid under 35 U.S.C. § 101 in light of *Bilski*, then the patent owner has conceded that the claims of the original patent are invalid, which may create an estoppel that a defendant can use in court against the patent owner if a patent lawsuit is filed while the reissue proceedings are pending.¹⁴⁴ As a result, the mere filing of a reissue application can in some cases bar a patent owner from pursuing injunctive relief for many years, even if there was otherwise a colorable legal basis for asserting the patent. This situation might arise in the current legal environment if, for example, a patent has claims that fail the machine-or-transformation test. As noted above, the machine-or-transformation test is not an exclusive test, and a patent owner might want to reserve the option of asserting such a patent in litigation and arguing to a court that the patent is valid under an alternate basis. In this situation, filing a reissue declaration potentially converts a patent having a risk of invalidity into one in which the patent owner has conceded that the original claims are invalid under 35 U.S.C. § 101.

D. Inflexible Non-Statutory Patent Office Rules

The reissue statute permits “reissue of the patent for the invention disclosed in the original patent” when there is “error without any deceptive intention.”¹⁴⁵ The statute also states that provisions of the Patent Act relating to applications for patents apply to reissue of a patent, except for minor exceptions.¹⁴⁶ The Patent

141. MPEP, *supra* note 22, at § 1402 (“Absent a statement that the patent for which reissue is sought is wholly or partly inoperative or invalid in that one or more patent claims is/are too broad, or a statement specifying and correcting some other (proper) 35 U.S.C. 251 error that renders the patent wholly or partly inoperative or invalid, such reissue applications do not recite an error within the meaning of 35 U.S.C. 251.”).

142. See 35 U.S.C. § 251 (2000).

143. MPEP, *supra* note 22, at § 1402.

144. See *id.* The oath is thus part of the prosecution history, which is relied upon by the public. See also MPEP, *supra* note 22, at § 1470 (rule requiring that reissue applications be open to inspection by the public).

145. 35 U.S.C. § 251.

146. See *id.*

Office has implemented its own internal procedural rules based on the Patent Office's interpretation of these provisions of the reissue statute.

These additional non-statutory rules make it difficult to correct patents by reissue. For a patent that has been issued more than two years (a "narrowing reissue") the reissue statute does not permit enlarging the scope of the claims.¹⁴⁷ However, the Patent Office interprets any removal of a claim limitation as an enlargement of the scope of the claim.¹⁴⁸ That is, Patent Office rules provide essentially no flexibility to pursue reissue claims in a narrowing reissue that remove a single limitation, even if other limitations are added such that, in an equitable sense, the claim has not been enlarged. For a narrowing reissue, a patent owner is typically permitted to only add additional narrowing limitations.¹⁴⁹ However, this might result in a claim that be worthless to the patent owner, since the narrowing limitations must also be supported by the technical description of the patent, and the claim as a whole would have to fall under a safe harbor of the Patent Office for 35 U.S.C. § 101.

The Patent Office also has other rules that impose hurdles on using reissue to correct claims. One rule is that the reissue application must be for the same general invention.¹⁵⁰ Thus, it is conceivable that if the claims change too much during reissue, the Patent Office will issue a rejection. In particular, the Patent Office rules state that the reissue claims are for the same general invention if:

(A) the claims presented in the reissue application are described in the original patent specification and enabled by the original patent specification such that 35 U.S.C. § 112 first paragraph is satisfied; and (B) nothing in the original patent specification indicates an intent not to claim the subject matter of the claims presented in the reissue application.¹⁵¹

The first requirement relates to the written description and enablement requirements of 35 U.S.C. § 112—that the patent specification support the subject matter of the reissue claims.¹⁵² But note the potential strictness of the second non-statutory requirement

147. *Id.*

148. See MPEP § 1412.03(I) (8th ed. Rev. 8, July 2010) ("A broadened reissue claim is a claim which enlarges the scope of the claims of the patent, *i.e.*, a claim which is greater in scope than each and every claim of the original patent.").

149. See *id.* at § 1412.03.

150. *Id.* at § 1412.01; *In re Amos*, 953 F.2d 613, 618, 21 U.S.P.Q.2d 1271, 1274 (Fed. Cir. 1991).

151. See MPEP, *supra* note 22, at § 1412.01.

152. See 35 U.S.C. § 112 (2006).

that “nothing . . . indicates an intention not to claim the subject matter of the claims in the reissue application.”¹⁵³ Suppose, for example, that the patentee provided a drawing in the original patent application showing the software module in a computer system, but that the text of the patent application includes a statement that in a preferred mode the invention is not tied to any particular machine and is best used outside of the computer system shown and illustrated. Arguably, the original patent application might be interpreted as indicating an intention not to claim the process tied to the computer system shown and illustrated in the patent application.¹⁵⁴ In this situation, there is a potential risk during reissue that amending process claims to tie them to the system that is illustrated in the patent application might be considered to be outside of the Patent Office’s rules that the reissue claims be directed to the same “general invention” of the original patent.

Another Patent Office rule is that a reissue cannot be used to obtain claims that could have been obtained in a divisional filing.¹⁵⁵ A divisional patent is a patent filed in response to a finding by the Patent Office that the original as-filed claims describe more than one invention.¹⁵⁶ The reissue statute does not explicitly bar such a reissue strategy. However, the Patent Office’s position is that there is no “error” under the reissue statute when a patentee attempts to use reissue to pursue claims that could have been pursued in a divisional application.¹⁵⁷ Thus, if a patent is filed with twenty claims, the Patent Office may issue a restriction requirement for a subset of these, such as for ten of the claims. The patent owner then has the option of filing a divisional application for the restricted claims, but only while the original patent application (or other closely related application) is pending.¹⁵⁸ After the original application issues as a patent, the right to file a divisional patent is typically lost.¹⁵⁹ Thus, there are situations where a patent owner during the original patent prosecution may have thought it safe not to pursue a divisional patent. In this situation the

153. See MPEP, *supra* note 22, at § 1412.01.

154. Note also the parallels to the best mode requirement of 35 U.S.C. § 112 (“The specification . . . shall set forth the best mode contemplated by the inventor of carrying out his invention.”). A patentee would be barred in reissue from seeking claims directed to, for example, a transformation (under the “machine-or-transformation” test) if the patent did not teach the best mode for implementing the additional limitations being added. *Id.*

155. See MPEP, *supra* note 22, at § 1412.01.

156. See *id.* at § 201.06.

157. See *id.* at § 1412.01.

158. See *id.* at § 201.06.

159. *Id.* (noting that divisional patents are carved out of pending applications).

patent owner is barred during reissue from pursuing the subject matter of the restricted claims during reissue. Where the restricted claims had precisely the types of limitations needed to satisfy the legal test for patentable subject matter, the patent owner would face a procedural bar to correcting their patent during reissue.

The Patent Office's rule against pursuing reissue claims that could have been obtained in a divisional application might arguably be reasonable for the situation that a patentee was attempting to use reissue to obtain *additional* claims that could have been obtained in the original prosecution. In a regime in which the court's interpretation of patentable subject matter changes slowly over time, a patentee in the original prosecution can gauge the scope of the allowed claims and choose to file a divisional patent application if they believe they need additional claim coverage. Here, the outcome for not filing a divisional application can be reasonably foreseen (i.e., less claim coverage) such that it is arguably fair for the Patent Office to infer that there is no error under the reissue statute and bar the patentee from pursuing the restricted claims during reissue.

In contrast, the Patent Office's rule barring reissue claims that could have been pursued in a divisional patent makes no sense when the courts change the rules for patentable subject matter. In this situation, the patentee would have no way of foreseeing the need to pursue a divisional patent for a later change in law during the original prosecution. There is the requisite error under the reissue statute in this situation, and the plain language of the reissue statute should govern to permit the patentee to correct the issued claims to be valid under 35 U.S.C. § 101.

E. Non-Statutory Recapture Rule

Moreover, even for a broadening reissue filed within two years of issuance the patent owner also faces the problem that correction during reissue proceedings might be impractical due to the recapture rule, as enacted by the Patent Office.¹⁶⁰ The recapture rule is a judicially-created doctrine that imposes an additional set of non-statutory restrictions about how claims may be changed during reissue proceedings.¹⁶¹ That is, despite the broad language of the reissue statute, the courts have imposed additional restrictions on correcting patents by reissue, which the Patent Office implements with a set of

160. See generally *id.* at § 1412.02.

161. See, e.g., *Ball Corp v. United States*, 729 F.2d 1429, 1435 (1984) (describing the recapture rule in terms of the statute's "error" requirement).

procedural rules.¹⁶²

The judicial rationale for the recapture rule is to impose additional principles of equity to limit the manner in which a patent owner can correct claims during reissue.¹⁶³ This includes the concept of estoppel regarding actions taken by the patent owner to get the patent allowed over prior art rejections.¹⁶⁴ The U.S. patent system is one in which the Patent Office performs a search of the prior art and often rejects the initially filed claims on prior art rejections.¹⁶⁵ The Patent Office then presents the patentee with an opportunity to present arguments or claim amendments to overcome the prior art rejections.¹⁶⁶ For example, if the initially filed claims have feature "A" and the Patent Office presents a reference having a feature similar to but not exactly the same as "A," the examiner might issue an obviousness rejection under 35 U.S.C. § 103. In this situation the patentee might amend the claim to include features "A + B" to overcome the prior art rejections. Alternatively, the patentee could argue that the claims already include a feature "C" that is not taught in the reference. Such arguments or claim amendments made to get the patent allowed over the prior art trigger the recapture rule if the patentee, in reissue, seeks to broaden the claim scope back to only feature "A"—the patentee is then said to have "recaptured" subject matter that was "surrendered" during prosecution of the original patent.¹⁶⁷

The recapture rule thus restricts the patentee from taking a position in reissue proceedings that is inconsistent with those arguments and amendments made in the original prosecution to obtain the issued patent over prior art rejections. Consider, for example, that the original as-filed claims were for a method of providing a secure website. The original claims are generally related to providing encryption-based password techniques for a user to securely use a website. During examination of the original patent, the Patent Office finds a reference having a subset of similar features. To obtain allowance of the claims, the patent owner then adds an additional limitation for making the website secure against hackers. Under the recapture rule, the patent owner is considered to have surrendered the

162. See MPEP, *supra* note 22, at § 1412.02.

163. *Ball*, 729 F.2d at 1439 n.28.

164. *Hester Indus., Inc. v. Stein, Inc.*, 142 F.3d 1472, 1480-82 (Fed. Cir. 1998).

165. See MPEP, *supra* note 22, at §§ 704.01, 706.

166. *Id.* at § 714.

167. *Id.*

subject matter of the earlier form of the claim and cannot, during reissue, merely remove the hacker security limitation, which was argued as being an important feature that rendered the claim patentable. As a result, for the case of a reissue application filed within two years of the date of issuance of the original patent, recapture of surrendered subject matter is only permitted if the claims are materially narrowed in other respects.¹⁶⁸ Surrendered subject matter includes subject matter added by amendment or argued during prosecution to distinguish over the prior art.¹⁶⁹

The recapture rule jurisprudence largely deals with cases in which the patentee attempted to broaden claims during reissue in order to dramatically increase the scope of the claims using reissue. In many of these cases the patent owner could have reasonably foreseen that adding a particular limitation to overcome the prior art would limit the scope of the claims.¹⁷⁰ The patent owner *could* have fought for claims having a broader scope instead of adding a particular limitation to overcome a prior art rejection. As such, the recapture rule restricts and limits the patent owner because of the perceived unfairness in letting the patent owner use reissue to take a second bite at the apple to pursue broader claims inconsistent with their positions in the original prosecution. The Patent Office has thus codified a set of procedural rules and policies supposedly based on the recapture rule to prohibit a patentee from obtaining a claim scope through reissue that was surrendered during prosecution.¹⁷¹ In practice many of these procedural rules are even more restrictive than would appear to be required under the case law, much less the reissue statute.

However, the recapture jurisprudence does not properly deal with the equities for a later change in the court's interpretation of patentable subject matter. A patent owner could not have, at the time the patent was being examined by the Patent Office, reasonably foreseen that the courts would at a future date change the rules on how claims must be written to comply with 35 U.S.C. § 101. The basic rationale of the recapture rule is thus inappropriate for the situation where a patent owner seeks to use reissue to correct a patent claim after *Bilski* for a 35 U.S.C. § 101 issue. The situation is made

168. *Id.* at § 1412.02.

169. *Id.*

170. *See, e.g., Hester Indus., Inc. v. Stein, Inc.*, 142 F.3d 1472, 1483 (Fed. Cir. 1998) (noting that "Hester does not explain how the explicit recitation of a spiral conveyance path—which is present in prior art cookers cited by the examiner during the prosecution of the original patent—materially narrows these claims").

171. *See* MPEP, *supra* note 22, at § 1412.02.

even worse by the extraordinarily strict interpretation of the recapture rule by the Patent Office, which provides no exceptions for changes made to address patentable subject matter issues or changes in law.

The Patent Office's interpretation of the recapture rule is one in which deleting even a single word of an issued claim may invoke the recapture doctrine.¹⁷² That is, the overall approximate scope of the claim as a whole is not the test for whether the claim is consistent with the reissue statute and principles of equity. Additionally, under the Patent Office's policy, adding limitations from other previously prosecuted claims (e.g., other issued claims of the patent or other earlier versions of claims examined by the Patent Office) may not constitute a material narrowing sufficient to avoid the recapture rule for a broadened reissue.¹⁷³ The Patent Office also has specific policies barring reissue claims directed to subject matter cancelled in the original prosecution.¹⁷⁴ The combination of all of these rules creates a procedural "straightjacket" making it hard to amend claims during reissue. Additionally, in the authors' experience, a patent owner can spend years fighting dubious recapture rejections, thereby increasing the number of years that the patent remains languishing in reissue proceedings.¹⁷⁵

The recapture rule applied by the Patent Office is grossly unfair to patent owners in the context of a reissue application filed to address changes in law by the courts for patentable subject matter. The recapture rule, as interpreted by the Patent Office, ignores the fact that the specific claim language that is argued to be patentable over the prior art in the original prosecution is also determined by Patent Office policies on indefiniteness under 35 U.S.C. § 112. Consider, as an example, a patent application filed in 2001 when *State Street* governed patentable subject matter. Suppose that a method claim was filed for a method of utilizing a processor including a limitation for: "adjusting a processor based on an alarm limit condition." The Patent Office then issues a series of rejections for both indefiniteness and

172. *Id.* at § 1412.03(I) ("A broadened reissue claim is a claim which enlarges the scope of the claims of the patent, *i.e.*, a claim which is greater in scope than each and every claim of the original patent").

173. *See* MPEP, *supra* note 22, at § 1412.02(I) ("we determine whether the reissue claims were materially narrowed in other respects, so that the claims may not have been enlarged, and hence avoid the recapture rule").

174. *See id.* at § 1412.02(I)(B)(1).

175. *See In re Mostafazadeh*, No. 10-1260, *appeal docketed* (Fed. Cir. Mar. 24, 2010) (U.S. Patent Appl. No. 10/016,750 (filed Dec. 10, 2001), Office Action (Dec. 16, 2009)).

also prior art rejections.¹⁷⁶ Here, let us assume that the examiner states that it is unclear in the original claim how the processor is adjusted and requires the patentee to correct the claim and suggests revising the claim language to “performing an adjustment of an alarm condition based on an alarm signal.” The patent owner then makes the suggested correction in an amendment and argues the patentability of the claim over the prior art, such as stating on the record that the prior art does not teach “performing an adjustment of an alarm condition based on an alarm signal.” In this example, the patentee was advised by the Patent Office to remove a machine limitation in favor of another limitation to clarify the claim language. The patent owner then subsequently argues the new language in arguing the patentability of the claim over the prior art. The recapture doctrine could bar the patentee in reissue from revising the claim language in favor of a processor limitation to satisfy the later “machine-or-transformation” test of the 2008 Federal Circuit *Bilski* decision.

The recapture doctrine applied by the Patent Office also ignores the fact that the specific language chosen by the patentee at the time a patent is filed is determined by the safer harbor guidelines of the Patent Office. For example, Patent Office guidelines in 2001 stated that one of the “safe harbors” was that “when the method, as claimed, produces a concrete, tangible, and useful result; i.e., the method recites a step or act of producing something that is concrete, tangible, and useful.”¹⁷⁷ Suppose that a patent is filed with limitation “z” because “z” is a safe harbor for patentable subject matter under existing Patent Office guidelines when the patent is filed (like the “useful, concrete and tangible” test). The patent owner then argues that the claims, including element “z”, are patentable over the prior art. The recapture doctrine then applies to limitation “z” during reissue proceedings, even if the law of patentable subject matter has subsequently changed (by, say, *Bilski*), and even though the only purpose of originally including it was because it was a safe-harbor example provided by the Patent Office when the patent was in prosecution.

Another problem with the recapture doctrine applied by the Patent Office is that it ignores the fact that a patentee, acting under the safe harbors provided by the Patent Office, may assume that it is safe

176. See 35 U.S.C. § 112 (2006) (noting that an indefiniteness rejection is a rejection that a claim’s language is unclear).

177. See MPEP, *supra* note 22, at § 2106(IV)(C)(2)(B)(2).

to cancel a subset of claims that are rejected.¹⁷⁸ As an illustrative example, suppose that a patent is allowed in 2004, under the *State Street* regime. During this time, the useful, concrete, and tangible test was a safe harbor. Suppose a subset of the claims includes a processor limitation that is rejected by the Patent Office, while a large number of other claims are allowed that do not have a processor limitation. The patent owner might safely assume that they can cancel the small number of rejected processor claims rather than spend more time and resources trying to get every claim allowed. The rejection may even be improper, but it takes time and money to fight Patent Office claim rejections. If the patent owner was unlucky enough to have cancelled those rejected processor claims to get their patent allowed, they have arguably surrendered the machine or processor limitations under the recapture doctrine.¹⁷⁹ Thus, in reissue proceedings, the patentee could face recapture rejections if they attempted to correct the patent to tie the process claims to a specific machine to satisfy the machine-or-transformation test, which is still an important clue to patentability under the new *Bilski* regime.¹⁸⁰ What this could mean in practice is a complete inability in the worst case to correct the claims.

The current legal environment is thus at a crisis when it comes to patent correction. Under 35 U.S.C. § 251, there is bright line law that expressly permits liberal correction of issued patents, and there is Supreme Court jurisprudence, stretching back to Justice Marshall in 1832, informing us that reissue should be liberally permitted to correct issued patents because “that sense of justice and of right which all feel, pleads strongly against depriving the inventor of the compensation thus solemnly promised.”¹⁸¹ Yet, as a practical matter, the reissue procedures cannot be used in an effective manner to address the changing definitions of patentable subject matter. Patent Office procedures are simply too slow and encumbered with too many additional layers of restrictive rules. The patent owner that attempts patent correction via reissue to address *Bilski* risks destroying the value of their patent during the five or more years that reissue proceedings drag on. In the worst case, they could find the patent is uncorrectable due to the Patent Office’s inflexible application of the

178. See *id.* at § 2106 (listing USPTO rules for patentable subject matter). Patent applicants relying on safe harbors created by the USPTO may later regret canceling claims relying on those safe harbors, should the Supreme Court or Federal Circuit change or reverse current policies.

179. *Id.* at § 1412.02.

180. See *Bilski v. Kappos*, 130 S. Ct. 3218, 3227 (2010).

181. *Grant v. Raymond*, 31 U.S. 218, 241-42 (1832).

recapture rule and lose the entire patent. This is clearly a crisis for anyone that believes that 35 U.S.C. § 251 should be read to provide broad relief to correct issued patents, particularly when the courts change the rules of the game after a patent has been granted.

VI. DO THE PATENT OFFICE'S REISSUE PROCEDURES CONSTITUTE A REGULATORY TAKING?

As described above, the USPTO reissue procedures thwart the equitable purposes of the reissue statute; but do these procedures erode the value of patents to such an extent that the procedures amount to a regulatory taking?

The Fifth Amendment of the U.S. Constitution provides that "private property [shall not] be taken for public use, without just compensation."¹⁸² The Supreme Court introduced the regulatory takings doctrine in *Pennsylvania Coal Co. v. Mahon*.¹⁸³ *Mahon* dealt with Pennsylvania's Kohler Act, which prohibited coal mining underneath property belonging to someone else in such a way as to cause the subsidence of, inter alia, any structure used as a human habitation.¹⁸⁴ In *Mahon*, Mrs. Mahon owned the surface rights to a tract of land, but the Pennsylvania Coal Co. owned the coal underneath Mahon's land.¹⁸⁵ The Supreme Court denied Mahon's suit for an injunction when the coal company sought to extract the coal, holding that the Kohler Act was a taking because it "[went] too far" in regulating the extraction of coal.¹⁸⁶ The Court explained that the Act made it "commercially impracticable" to mine certain coal.¹⁸⁷

The Court further refined the doctrine in *Penn Central Transportation Co. v. City of New York*, establishing an ad hoc factual inquiry in which courts must analyze the character of the government action.¹⁸⁸ For instance, physical invasions are more likely to be found to be a taking than when "some public program adjust[s] the benefits and burdens of economic life to promote the common good."¹⁸⁹ In addition, the Court noted that a taking is more likely to be found when a government regulation frustrates the property owners' investment-

182. U.S. CONST. amend. V.

183. *Pennsylvania Coal Co. v. Mahon*, 260 U.S. 393, 415 (1922); see also STEVEN J. EAGLE, REGULATORY TAKINGS 1, 5 (4th ed. 2009).

184. *Mahon*, 260 U.S. at 412-13.

185. *Id.*

186. *Id.* at 415.

187. *Id.* at 414-15.

188. See *Pennsylvania Cent. Transp. Co. v. City of New York*, 438 U.S. 104 (1978).

189. *Id.* at 124.

backed expectations.¹⁹⁰ Refining this analysis, the Supreme Court in *Agins v. City of Tiburon* stated that just compensation is required when a regulation deprives the owner of all “economically viable use of his land.”¹⁹¹ Moreover, a regulation that is merely a temporary deprivation of all economically viable use of property does not categorically rise to the level of a taking, but the Court has acknowledged that delays could conceivably last long enough to “interfere with reasonable investment-backed expectations.”¹⁹²

There is, however, considerable debate about whether the Takings Clause applies to patents.¹⁹³ In *Zoltek Corp. v. United States*, the Federal Circuit held that patent infringement by the government does not constitute a taking of private property actionable under the Tucker Act.¹⁹⁴ At least one commentator, however, has pointed out that longtime Supreme Court precedent has historically treated patents as private property, and that patents are therefore subject to the Takings Clause.¹⁹⁵ Still, the applicability of the Takings Clause to patents will remain uncertain until the Supreme Court specifically addresses the issue.

In any event, the reissue crisis is distinguishable from *Zoltek*. Whereas *Zoltek* dealt with economic losses caused by government infringement of a particular patent in one specific case,¹⁹⁶ the USPTO’s slow and restrictive reissue procedures have the potential to unnecessarily diminish or even wipe out all economic value of some particular patents. This effectively frustrates patentees’ reasonable expectations that the reissue statute should permit patentees to quickly and liberally correct issued patents to restore the maximum value permitted under the reissue statute after a change in the courts’ jurisprudence on patentable subject matter. The Supreme Court has even used language similar to that in its takings jurisprudence when discussing sudden changes to the patent laws. As Justice Kennedy noted in *Festo v. Shoketsu Kinzoku Kogyo Kabushiki*, “courts must be

190. *Id.*

191. *Agins v. City of Tiburon*, 447 U.S. 255, 260 (1980); *see also* *Lucas v. South Carolina Coastal Council*, 505 U.S. 1003 (1992).

192. *Tahoe-Sierra Preservation Council, Inc. v. Tahoe Reg’l Planning Agency*, 535 U.S. 302, 341-42 (2002).

193. *See generally* Adam Mossoff, *Patents as Constitutional Private Property: The Historical Protection of Patents Under the Takings Clause*, 87 B.U. L. REV. 689 (2007); J. Nicholas Bunch, *Takings, Judicial Takings, and Patent Law*, 83 TEX. L. REV. 1747 (2005).

194. *Zoltek Corp. v. United States*, 442 F.3d 1345 (Fed. Cir. 2006), *rehearing en banc denied*, 464 F.3d 1335.

195. *See generally* Mossoff, *supra* note 193.

196. *Zoltek*, 442 F.3d at 1352-53.

cautious before adopting changes that *disrupt the settled expectations of the inventing community*”¹⁹⁷ (emphasis added). Indeed, “[t]o change so substantially the rules of the game now could very well subvert the various balances the PTO sought to strike when issuing the numerous patents which have not yet expired and which would be affected by our decision.”¹⁹⁸

Consider the investment-backed expectations of a high-tech company. High-tech companies depend on patents as part of their investor-backed growth strategies. If all of a patent’s claims are suddenly invalidated by a change of law, then all of that patent’s value has been completely destroyed. Changes in the courts’ definition of patentable subject matter may, in some cases, deprive the patent owner of the entire value of their patent. As noted above, for many patents, reissue is impractical due to the recapture rule or aspects of the Patent Office’s rules and procedures. For these patents, the entire value of the patent may be lost forever due to a change in law regarding patentable subject matter.

As one example, consider a company that was started some time ago and now has a portfolio of issued patents. As with many tech companies, the company has changed business directions and now desires to sell off part of its patent portfolio not directed to its core business. The company spent millions of dollars in R&D. Now it desires to recoup part of its previous R&D investments by selling off a portion of its patent portfolio. In this example, the resale value of the patents may be negligible due to the change in the courts’ definition of patentable subject matter and the impracticality or impossibility of correcting the patents. Here, the company’s reasonable expectation that its patents could be sold to recoup past R&D investments is frustrated.

For patents that are correctable under the reissue statute, some aspects of the patent’s value might eventually be restored through filing a reissue application under the reissue statute.¹⁹⁹ If the claims emerge from reissue with substantially the same claim scope, then rights to past damages will not be lost. The value of a patent includes

197. *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 739 (2002) (emphasis added).

198. *Festo*, 535 U.S. at 739 (quoting *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 32 n.6 (1997) (internal quotation marks omitted); see also *Warner-Jenkinson*, 520 U.S. at 41 (Ginsburg, J., concurring) (“The new presumption, if applied woodenly, might in some instances unfairly discount the expectations of a patentee who had no notice at the time of patent prosecution that such a presumption would apply.”).

199. See 35 U.S.C. § 251 (2000).

many aspects. Consider as another example a startup company that has one issued patent to protect its core business for a revolutionary new technology. That patent may be used for many purposes. It can be used to help attract additional rounds of venture financing. The patent can be used as a defensive bargaining chip if the startup company is sued by a larger company. That is, if the startup company is sued for patent infringement, it can file a countersuit with its own patent to try to force a reasonable settlement. The patent may also be used to improve the valuation of the company in merger or acquisition talks. Additionally, the patent might be sold or licensed to raise money if the company runs low on funds. During reissue proceedings, however, many uses of the patent are frustrated, such as using the existence of an issued, valid patent with broad enforceable claims to help raise venture financing or dissuade rival companies from suing the startup. Also, the filing of a reissue application will likely make it difficult to license or sell the patent at its previous value during the reissue proceedings. Thus, while reissue may be theoretically possible in this example, the company could lose out on many of the traditional expected uses of the patent during the five-to-ten year period that the patent spends in reissue proceedings. In that sense, even if reissue is possible, the company's reasonable investment backed expectations are frustrated.

To the degree that the USPTO's procedures unreasonably inhibit patentees from effectively correcting their patents in a reasonable time period, then that is arguably a regulatory taking by the USPTO.²⁰⁰ And given the finite patent term length and the slow reissue process, the delays incurred in reissue are often permanent—not temporary—delays.²⁰¹ The undue delays in prosecution of reissue applications, the risk of litigation estoppel from complying with the oath requirement, the loss of damages because of the "substantially identical" statutory element, the impracticality of non-statutory rules, and the rigid application of the recapture doctrine are all procedures implemented by the USPTO (and also the courts in the case of recapture) that could result in the complete elimination of a patent's value. In many cases, this would greatly frustrate patentees' "investment-backed

200. See *Tahoe-Sierra Preservation Council, Inc. v. Tahoe Reg'l Planning Agency*, 535 U.S. 302, 341-42 (2002) (declining to find a taking because the trial court did not conclude that the delay in formulating a regulatory plan was unreasonable).

201. See *id.* (noting that a taking is more likely to be found where the deprivation of property is permanent; although, unreasonable temporary delays may also be takings if they frustrate investment-backed expectations).

expectations.”²⁰²

If the patentee is unable to effectively correct the legal error made without deceptive intent in contravention of the purposes of the reissue statute, or if the reissue procedures unfairly result in an unenforceable patent, then the patentee should be entitled to just compensation. Given these serious problems, the authors urge the PTO, Congress, and the courts to revise their reissue practices to remedy these inequities.

VII. POTENTIAL SOLUTIONS TO THE PATENT CORRECTION CRISIS

As described above, the patent system is at a crisis point in that many patent owners will not be able to use reissue to maintain the value of their issued patents in light of changes in the courts’ patentable subject matter jurisprudence. What can be done to address the current crisis in patent correction? One option is for the Patent Office to change its practices with respect to reissue proceedings. Reissue proceedings are exceedingly slow and do not have a dedicated examination unit. In contrast, reexamination proceedings in the Patent Office are conducted with special dispatch²⁰³ and are examined by a special examination unit that specializes in reexamination.²⁰⁴ As a result, the average pendency in ex parte reexamination is between two to four years,²⁰⁵ or about two years less than the pendency of reissue proceedings. There is no reason why a reissue proceeding cannot be conducted in a similar manner to reduce the pendency of reissue proceedings to a more reasonable length of time.

Another option would be for the courts and the Patent Office to relax the application of non-statutory rules for the special case of using reissue to amend claims to comply with a change in the courts’ jurisprudence on patentable subject matter that occurs after a patent has issued, i.e., for this special situation to permit reissue to the fullest extent permissible under the reissue statute. Future changes in law by the courts on patentable subject matter cannot be reasonably foreseen during the prosecution of a patent, making it unfair to the patent owner to impose the additional non-statutory restrictions of the Patent

202. *See id.*

203. *See* MPEP, *supra* note 22, at § 2209.

204. *Id.* at § 2233.

205. Robert G. Sterne, *Guest Post: Hot Topics in U.S. Patent Reexamination*, PATENTLY-O BLOG (March 10, 2009, 7:49 AM), <http://www.patentlyo.com/patent/2009/03/guest-post-hot-topics-in-us-patent-reexamination.html>.

Office and the recapture rule. When there has been a change in law by the courts, the literal language of the reissue statute should govern to permit liberal leave to amend the claims to address 35 U.S.C. § 101 issues, even if that requires revising claim language that is surrendered under the current interpretation of the recapture rule or adding claim language that would ordinarily not comport with other non-statutory Patent Office rules. Moreover, when there has been a change in law, the claim scope as a whole should be examined to make sure that the claims are not unduly enlarged to give the patent owner greater flexibility to revise claim language.

Still yet another option would be to relax the standard for patent owners to collect past damages for reissue claims when the only changes made to the claims are to address changes in law for patentable subject matter unrelated to prior art issues. Under the current legal regime a patent owner faces the concern that even adding a single machine element into a process claim to satisfy the machine-or-transformation test may be found to narrow the scope of the claim enough to lose rights to all past damages.²⁰⁶ A special exception could be carved out providing specific safe harbor exceptions for minimal corrections made to satisfy the machine-or-transformation test or other safe harbor tests that the courts may develop for determining patentable subject matter under *Bilski*. Alternately, the courts could develop an equitable framework to permit the collection of past damages for corrections made to add elements that one of ordinary skill in the art would understand are implicitly included in the claim or otherwise required to practice the claim.

Finally, Congress could amend the pending Patent Reform Act to explicitly liberalize the correction procedures through reissue.²⁰⁷ Legislators could add language to §§ 251-252 providing special, liberal rules for reissue applications filed in response to changes in the interpretation of the Patent Act by the courts. The Patent Reform Act could also create a faster mechanism for reviewing reissue applications that merely seek to respond to changes of the law, particularly for changes to the law of patentable subject matter.

VIII. CONCLUSION

In conclusion, the Supreme Court's holding in *Bilski* signals yet another change in the Court's definition of patentable subject matter.

206. See 35 U.S.C. § 252 (2006); see also discussion *supra* Part V.B.

207. See generally The Patent Reform Act of 2009, S. 515, 111th Cong. (2009).

Bilski affects a wide variety of patents, not just dubious business method patents. The unexpected result of *Bilski* is that the patents of even widely admired companies are potentially at risk. Unfortunately, patent owners are not able to obtain the intended relief promised by the reissue statute, creating a problem for patent owners. This article proposes changes that should be made by the courts and the Patent Office to permit a patent owner to liberally and speedily correct their patent and obtain past damages to the fullest extent possible under 35 U.S.C. §§ 251-252 whenever the courts change the definition of patentable subject matter.

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